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Science enrolments up but challenges still exist

30 May 11 by Natasha Egan | *Print this story* | *Send this story to a friend*

Australia punches above its funding weight in science research Natasha Egan finds as she looks at faculties across the country are faring

Science enrolments are up, not enough students are doing maths, there are challenges around student teacher ratios, all the while research outcomes are seen as good, but a lack of funding means most projects don't see the light of day.

These are some of the opinions on Australia's science educators about the current state of university science.

Universities across the country contacted by Campus Review reported a strong growth in enrolments.

At the University of Adelaide, Professor Bob Hill who is executive dean of the Faculty of Sciences said they had "comfortably exceeded" the ambitious student commencement targets set for this year.

Hill was also pleased with how Adelaide's science disciplines performed in the Excellence in Research for Australia (ERA) process. They had "topped the rest of the nation" in agricultural science, he said.

It was a similar story at the University of Melbourne where science faculty associate dean Professor Philip Batterham said they were "seeing unprecedented numbers studying science". He said undergraduate science enrolments had steadily increased since they introduced the 'Melbourne Model' from 1,012 in 2008 to 1,869 this year. This is where students do a generalist undergraduate degree and specialise at postgraduate level.

Batterham also commented that while Melbourne got more than its share of the research funding pie relative to size "the pie just isn't big enough."

At the University of Queensland, lecturer Kelly Matthews also reported a hike in the number of science students. But Matthews, who doing a PhD about mathematics and science in higher education, said increased numbers meant a widening of the student/teacher ratio.

"We just see that the students we're getting have less opportunity to interact with the scientists who are teaching them," Matthews told Campus Review.

Even though numbers in most sciences are growing, Western Australia's 2009 scientist of the year Professor Cheryl Praeger said there were still not enough Australian students studying higher degree maths.

Praeger is director of the Centre for Mathematics of Symmetry and Computation at the University of Western Australia. She is also a fellow of the Australian Research Council (ARC).

There had been some mixed results regarding math science in the recently released Research Workforce Strategy, she said. On the one hand predictions of an academic workforce in mathematical sciences would increase by 50 per cent leading up to 2020 were positive but figures showed a large number of people were also going to retire.

Another positive point in the workforce report was that more than 80 per cent of higher degree maths research students said their degree was important for their job. Praeger said this was statistically higher than in other disciplines.

Australia however was just not producing enough maths graduates, she said. When compared to 20 OECD countries Australia came third from the bottom ahead of New Zealand and Korea.

"The proportion of maths graduates that Australia produces is less than half the OECD average," Praeger told Campus Review.

She said the courses were available and a lot overseas students were interested but not enough local students.

Like Hill, Praeger was pleased with the ERA results, especially with how well pure maths did.

On a different tack Melbourne Energy Institute's director, Professor Mike Sandiford questioned whether the field was attracting people best suited to it. "Too many people come to universities as kids ... determined to be something before they really explore who they could be," Sandiford said.

He said he believed the Melbourne Model could address this issue by giving students the opportunity to explore options before they made their decisions.

Sandiford said Australia's research record in science was world class. "It's quite staggering with the level of funding that we do so well."

He named geoscience and physics as the "two stellar performers in Australian science by international benchmarks."

The level of funding was a common talking point. At the University of Melbourne, Batterham had expressed his regret over the cancellation of school science programs - Primary Connections and Science by Doing.

Although Australia is said to be punching above its weight when it comes to research, the ARC's annual report showed that just over 20 per cent of discovery projects were successful in the 2009-10 selection rounds. Discovery grants are the main funding source for research in science.

Batterham, who reviews grant applications, said while the standard was high many seeking funding were discouraged because of the large failure rate.

He said he did not enjoy reviewing grants because so many that he regarded highly did not get funded. "And that's really sad because of the talent of the people concerned and the quality of the work they would do."

He said most schemes had about a 20 per cent success rate. And while he congratulated the government for it efforts he said a new government fellowship for early career researchers could see even lower success rates.

The ARC said on its website it anticipated up to 200 awards might be given under the program. But Batterham said he heard there could be up to 3,000 applicants.

Batterham said a big part of the problem was that Australia still did not see research as an investment. "We see it as something that we can opt in to or out of depending on the state of the national budget. We just don't see it as something that is absolutely crucial to our future, to the diversification of our economy."

Kelly Matthews at UQ said communicating success was often a problem so to that end they were introducing a new class next year which will focus on communicating science to different audiences.

Matthews said they already taught students how to communicate to a scientific audience but they wanted to build on those skills as they understood the value of being able to communicate in a non-technical way.